

EXHIBIT 1

Clerk of the Superior Court
*** Electronically Filed ***
09/09/2022 8:00 AM

SUPERIOR COURT OF ARIZONA
MARICOPA COUNTY

CV 2020-006219

09/08/2022

HONORABLE TIMOTHY J. THOMASON

CLERK OF THE COURT
A. Meza
Deputy

STATE OF ARIZONA, et al.

BRUNN W ROYSDEN III

v.

GOOGLE L L C

JEAN JACQUES CABOU

**Exhibit
0008**

7/11/2023
Hoffman

SIMONA AGNOLUCCI
JOSHUA D ANDERSON
LORI ARAKAKI
MICHAEL S CATLETT
ALEXIS E DANNEMAN
MICHAEL ESHAGHIAN
ARGEMIRA FLOREZ
BENEDICT Y HUR
KEVIN D NEAL
PETER A PATTERSON
KENNETH NOEL RALSTON
GUY RUTTENBERG
BARRY C SCHNEIDER
CHRISTOPHER M SLOOT
DAVID H THOMPSON
JUDGE THOMASON

MINUTE ENTRY

Google LLC (“Google”) has moved to preclude the testimony of Dr. Colin Gray (“Gray”) and references to “dark patterns.” The Court has considered the Motion and the Response, along with the arguments of counsel.

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Under Arizona law, “[a] witness who is qualified as an expert by knowledge, skill, experience, or education” may offer expert testimony if (a) “the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue”; (b) “the testimony is based on sufficient facts or data”; (c) “the testimony is the product of reliable principles and methods”; and (d) “the expert has reliably applied the principles and methods to the facts of the case.” Ariz. R. Evid. 702. Arizona’s rule embodies the federal standard of reliability set forth in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

“Rule 702 embodies the twin concerns of reliability and helpfulness.” *Stilwell v. Smith & Nephew, Inc.*, 482 F.3d 1187, 1192 (9th Cir. 2007). “The court need not admit an expert opinion that is connected to the underlying data ‘only by the ipse dixit of the expert.’” *Schuffert v. Ashland Inc.*, CV 2015-006230, 2019 WL 4459887, at *1 (Ariz. Super. Ct. Jan. 23, 2019).

The expert must be qualified by “knowledge, skill, experience, training or education[.]” Google contends that Gray is not qualified. Google’s position is wrong. Dr. Gray is an expert in human-computer interaction and the study of dark patterns. He is a tenured Associate Professor at Purdue University. He holds a PhD in Instructional Systems Technology. Dr. Gray has nearly 20 years of experience in commercial design in building brand strategy. His work as a designer, art director, web developer and program lead for undergraduate and graduate programs has allowed Dr. Gray to work extensively on privacy-related issues.

Dr. Gray’s 2018 paper, *The Dark Pattern Side of UX Design*, is one of the top cited works in dark patterns literature. At a 2021 Federal Trade Commission (“FTC”) panel on dark patterns, one of the speakers explained that scholars on dark patterns “stand on the shoulders of giants,” including Dr. Gray. Gray has been quoted by many major publications.

Dr. Gray is clearly qualified to testify. The operative question is whether his testimony is relevant, reliable and can be of assistance to the jury.

Dr. Gray’s opinions pertain to whether certain Google settings or features can be categorized as “dark patterns.” The phrase “dark patterns” is not mentioned in the Complaint or in the Arizona Consumer Fraud Act (the “ACFA” or “Act”). “Expert testimony which does not relate to any issue in the case is not relevant and, ergo, non-helpful” as required by Rule 702. *State ex rel. Montgomery v. Miller*, 234 Ariz. 289, 298, ¶ 21 (App. 2014).

Arizona law requires expert evidence to be “based on sound principles” that are “capable of independent validation.” *Schuffert*, 2019 WL 4459887, at *3. Arizona courts consider various factors, including whether the theory has been tested, whether the theory is subjected to peer review and publication, whether the theory is generally accepted in the relevant scientific

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community, the known or potential error rate, and the existence of standards controlling application of the technique. *Miller*, 234 Ariz. at 299, ¶ 24.

Google contends that “dark patterns” is an inherently vague term. A dark pattern is not necessarily deceptive or illegal. *See* Brignull, *Dark Patterns: Deception vs. Honesty in UI Design, A List Apart* (blog) (November 1, 2011). A dark pattern is certainly not necessarily a violation of the Act.

Google claims that Dr. Gray could not provide a precise and meaningful definition of “dark patterns.” Dr. Gray said that there are a “range of different definitions.”

The fact that there are various definitions for “dark patterns” does not necessarily mean, however, that a discussion of such patterns could not help the trier of fact. In any event, in his report, Dr. Gray said that “(d)ark patterns are design features used to deceive, steer, or manipulate users into behavior that is profitable for an online service, but often harmful to users or contrary to their intent.” The fact that there are alternative meanings to the term does not mean that an expert should not be able to testify about the term. Indeed, there are many subjects that have various alternative definitions.

The Court initially had reservations about whether an expert should be discussing a seemingly nebulous concept such as “dark patterns.” In reality, however, the study of dark patterns is well accepted. During oral argument, Google conceded that “dark patterns” is not “junk science.”

The FTC has described dark patterns as “design features used to deceive, steer or manipulate users into behavior that is profitable for an online service, but often harmful to users or contrary to their intent.” *In re Age of Learning, Inc.*, Dkt. No. 1723186 (Sept. 2, 2020). FTC Commissioner Rohit Chopra stated that the “FTC Act itself prohibits unfair and deceptive practices and vests the Commission with authority to analyze emerging practices and define which practices are unlawful.” He specially called out “companies deploying dark patterns to dupe us” by “create a maze of ‘privacy’ settings so complex that their own engineers and employees can’t crack the code.” *Id.*

There is extensive scholarship on dark patterns and how they can be used to modify the user’s perception of choice architecture. Indeed, the study and existence of dark patterns is well recognized in the literature. Indeed, Google’s own engineers use the concept of dark patterns as an analytical tool.

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Google has made no showing that a substantial part of the scientific community disfavors the principle of dark patterns. Scientific consensus is not a *Daubert* requirement. *Miller*, 234 Ariz. at 301, ¶36.

The fact that not every dark pattern would be a violation of the ACFA does not preclude admissibility. Rather, the operative question is whether the testimony would be of assistance to the jury. Here, Dr. Gray's testimony could be of assistance to the jury. He opines that Google creates the false impression that users can control whether Google tracks their location when, in fact, it turns out there is nothing users can do to prevent Google from tracking them. This type of testimony is directly relevant and could be of assistance to the jury.

Google argues that Dr. Gray's conclusion that Google's systems create dark patterns is a subjective conclusion. He allegedly used no reliable principles or methods. He allegedly did no empirical analysis. Google points out that Dr. Gray only claimed in his rebuttal report, for the first time, that his process was a "content analysis." No analysis, however, was described. During oral argument, Google argued that this was a principal reason why Gray's testimony should be excluded.

Dr. Gray cited Neuendorf, *The Content Analysis Guidebook* (2nd Ed. 2017). Google contends that he did not, however, follow Neuendorf's *Guidebook*.

Google also argues that Dr. Gray did not document his work through a coding formula. Engaging in such a process would have enabled others to test the conclusions and determine their accuracy. According to Google, there is no verifiable manner for his conclusions to be tested. Dr. Gray allegedly simply looked over certain material and then made a subjective determination about dark patterns.

Google argues that Gray employed no reliable principles or methods. For example, Dr. Gray allegedly based his conclusion that certain settings were dark patterns on a review of various internal documents summarizing focus groups and surveys. According to Google, his conclusions were completely subjective.

The State contends, however, that Dr. Gray used perfectly reliable methodologies and arrived at reliable opinions. Gray was asked to determine if Google employed dark patterns. According to the State, Gray conducted a detailed and painstaking analysis. The dark patterns literature provides classifications, attributes and criteria that are to be employed for evaluating if, where and how choice architecture is used deceptively.

The State contends that Gray did conduct a content analysis. He looked at Google's locations settings, user interfaces, design documents, user studies and internal documents and

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testimony. He applied the topology from his own 2018 work. He looked for various attributes of dark patterns that is discussed in the literature. He identified several attributes recognized as dark patterns. For example, he identified how and where the choice architecture included one or more of the five topologies taken from his own studies. According to the State, Gray utilized objective criteria, well accepted in the literature.

Courts have recognized that qualified experts are allowed to conduct heuristic studies, even where the process involves some subjective assessments. *United States v. Wells*, No. 3:13-CR-00008-SLG, 2019 WL 2110731 at *15 (D. Alaska July 17, 2019). Experts often make some subjective determinations. This does not preclude admissibility.

The fact that Gray did not precisely follow Neuendorf's methodology is hardly fatal. Indeed, there are many legitimate ways to conduct content analysis. Gray used artifact analysis, which is a form of conduct content analysis.

Gray did not need to code here. Coding is typically done when multiple people are involved that are referring to numerous sources. The absence of coding is a subject that can be addressed on cross-examination. It does not go to admissibility.

Google's contentions that Gray did not use reliable data and that he cherry picked documents does not merit exclusion of his testimony. Dr. Gray did review extensive material. In any event, reliability is primarily a question of the validity of the methodology. The quality of the data reviewed is generally a matter for cross examination. *See Manpower, Inc. v. Ins. Co. of Pennsylvania*, 732 F.3d 796, 806 (7th Cir. 2013).

Some of Google's arguments turned out to be disingenuous. For example, Dr. Arunesh Mathur, who Dr. Gray described as a "respected scholar," allegedly stated that "[t]he current academic discourse about dark patterns is built on a shaky foundation." According to Google, Dr. Mathur's own comments demonstrate that the entire notion of "dark patterns" is elusive and uncertain.

The State apparently asked Mathur to respond. He said that Google "is misinterpreting his paper" which does not "argue that the field is fragmented, contradictory or incapable of rigorous analysis." Mathur endorsed the validity of dark patterns as a tool for evaluating deceptive design.

The Court finds no basis for excluding Dr. Gray's opinions. The concept of dark patterns has acceptance in the community. Gray's opinions are relevant and could assist the jury.

Following oral argument, the Court went back and looked at Gray's report. The Court does not conclude that Gray came up with purely subjective opinions. Rather, it does appear as if Dr.

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Gray used a content-based methodology. He looked at many aspects of Google's technology and disclosures. He carefully tied back many of Google's systems to specific indicia of "dark patterns." As noted above, the fact that Gray did not precisely follow Neuendorf's methodology is not a basis for exclusion. Rather, it is a subject for cross. Dr. Gray used reliable methodologies and he relied on sufficient facts and information.

Dr. Gray provided a rebuttal report and a supplemental report. Google focuses on two points in the rebuttal. First, Dr. Gray called Dr. Mathur to discuss language Google's experts used about Mathur's work. As such, the inquiry was done to rebut Google's expert. Second, the rebuttal discusses a "content analysis." Gray's rebuttal report, however, explains that his initial report was a content analysis report. This point was made in response to points raised by Google's experts. This was proper rebuttal.

Gray provided a supplemental report that was not provided for in the Scheduling Order. That report, however, discussed a report that was published on June 30, 2022. The supplemental report was provided promptly after the report was published—on July 11. Since the report addresses information that was not previously available, the Court declines to strike it. The Court is not in a position to determine the relevance of that report. If the State seeks to introduce it or use it at trial, the Court will have to assess relevance at that time.

The Motion is denied.